

ABSTRACT

Method for survey design including configuring electrodes to reduce near-surface noise in the seismic response from an electroseismic survey of a subterranean formation. Different embodiments of the invention include (1) selective measurement of the surface noise to remove it from the data; (2) suppressing surface noise generation by reducing electric fields in the vicinity of some of the electrodes; (3) creating source signature differences between the near-surface seismic response and the deep response enabling the near surface response to be removed in data processing; (4) applying an external near-surface magnetic field to modulate the near-surface seismic response, enabling it to be removed in processing; and (5) constructing a partial Faraday cage to shield a near-surface region from fields generated by the electrodes.